THAT WHICH IS CLAIMED IS:

1. An isolated antimicrobial peptide isolated from a mast cell.

2. A peptide according to claim 1, wherein said mast cell is a fish mast cell.

3. A peptide according to claim 1, wherein said mast cell is a mammalian mast cell.

4. A peptide according to claim 1 selected from the group consisting of peptides having an amino acid sequence selected from the group consisting of:

SEQ ID NO: 1;

SEQ ID NO: 2; and

SEQ ID NO: 3.

5. A method of isolating an antimicrobial peptide, comprising the steps of:

(a) providing mast cells;

(b) detecting a peptide having antimicrobial activity in said mast cells; and

(c) isolating said detected peptide.

6. A method according to claim 5, wherein said mast cells are fish mast cells.

7. The method according to claim 5, wherein said mast cells are mammalian mast cells.

8. The method according to claim 5, wherein said providing step is carried out by collecting tissue containing mast cells.

9. The method according to claim 5, wherein said detecting step is carried out by extracting pepetides from said mast cells and screening said extracted peptides for antimicrobial activity.

10. A pharmaceutical formulation comprising a peptide according to claim 1 in a pharmaceutically acceptable carrier.

11. A method of treating microbial infection in a subject in need thereof, comprising administering to said subject an antimicrobial peptide according to claim 1 in an effective antimicrobial amount.

12. A method of reducing antibiotic resistance in a bacteria, comprising administering to a bacteria resistant to at least one antibiotic a peptide according to claim 1 in an amount effective to reduce antibiotic resistance.

13. A method according to claim 12, wherein said at least one antibiotic is selected from the group consisting of methicillin, vancomycin, and streptogramin.

14. A method according to claim 12, wherein said bacteria is selected from the group consisting of *Staphylococcus aureus, Escherichia coli, Streptococcus faecalis, Klebsiella pneumoniae, Pseudomonas aeruginosa,* and *Shigella flexneri.*

15. An antibody that specifically binds to a peptide according to claim 1.

16. An antibody according to claim 15, wherein said antibody is a monoclonal antibody.

17. A nucleic acid that encodes a peptide of claim 1.

18. A nucleic acid of claim 17, wherein said nucleic acid is DNA.

19. A pharmaceutical formulation comprising a peptide according to claim 9 in a pharmaceutically acceptable carrier.

20. A method of treating microbial infection in a subject in need thereof, comprising administering to said subject an antimicrobial peptide according to claim

9 in an effective antimicrobial amount.

21. A method of reducing antibiotic resistance in a bacteria, comprising administering to a bacteria resistant to at least one antibiotic a peptide according to claim 9 in an amount effective to reduce antibiotic resistance.

22. A method according to claim 21, wherein said at least one antibiotic is selected from the group consisting of methicillin, vancomycin, and streptogramin.

23. A method according to claim 21, wherein said bacteria is selected from the group consisting of *Staphylococcus aureus, Escherichia coli, Streptococcus faecalis, Klebsiella pneumoniae, Pseudomonas aeruginosa,* and *Shigella flexneri.*

24. An antibody that specifically binds to a peptide according to claim 9.

25. An antibody according to claim 24, wherein said antibody is a monoclonal antibody.

26. A nucleic acid that encodes a peptide of claim 9.

27. A nucleic acid of claim 26, wherein said nucleic acid is DNA.